

## IN THE CLAIMS

1. **(currently amended)** A targeted oligonucleotide construct comprising:  
a targeting moiety which localizes to a site in an organism;  
an oligonucleotide that is an antisense oligonucleotide or an antisense oligonucleotide analog that is modified to enhance its efficacy, pharmacokinetic properties, or physical properties; and  
an imaging agent suitable for use in Positron Emission Tomography (PET), Single Photon Emission Tomography (SPECT) or Magnetic Resonance Imaging (MRI)[[,]]; wherein the targeting moiety is selected from an antibody, a lectin, a ligand, a sugar, a steroid, a hormone, a nutrient, a small molecule and a protein, ~~and wherein~~  
~~said the~~ targeted oligonucleotide construct has essentially no ability to cross the blood/brain barrier as determined by a biodistribution analysis,  
the oligonucleotide is designed to promote retention of the construct by a cell;  
the oligonucleotide is a C-myc, N-myc, C-myc or PSA gene specific antisense oligonucleotide or oligonucleotide analog; and  
the targeting moiety, oligonucleotide and imaging agent are covalently linked.
2. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is selected from the group consisting of: an unpaired spin atom, a free radical, a paramagnetic contrast agent and a metal chelate.
3. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is a paramagnetic contrast agent selected from the group consisting of: gadolinium, cobalt, nickel, manganese, and iron.
4. **(canceled)**
5. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is a radiolabel selected from the group consisting of: <sup>131</sup>I, <sup>123</sup>I, <sup>99m</sup>Tc, <sup>18</sup>F, <sup>68</sup>Ga, <sup>67</sup>Ga, <sup>72</sup>As, <sup>89</sup>Zr, <sup>64</sup>Cu, <sup>62</sup>Cu, <sup>111</sup>In, <sup>203</sup>Pb, <sup>198</sup>Hg, <sup>11</sup>C, <sup>97</sup>Ru, and <sup>201</sup>Tl.

6. **(previously presented)** A targeted oligonucleotide construct as in claim 5, wherein the radiolabel is a chelate.
7. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is an iron, lanthanide or gadolinium unpaired spin atom or free radical.
8. **(previously presented)** A targeted oligonucleotide construct as in claim 1, further comprising a therapeutic agent.
9. **(canceled)**
10. **(previously presented)** A targeted oligonucleotide construct as in claim 8, wherein the therapeutic agent is selected from an enzyme, an enzyme inhibitor, a receptor ligand, a radioisotope, an antibiotic, a steroid, a hormone, a polypeptide, a glycopeptide, a phospholipid, and a drug.

Claims 11-24 **(canceled)**

25. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein the oligonucleotide is an antisense oligonucleotide analog that is selected from the group consisting of: an antisense oligonucleotide that is modified with a cell uptake facilitating moiety, an antisense oligonucleotide that is modified with a stabilizing moiety, an antisense oligonucleotide that is modified to enhance its solubility, and an antisense oligonucleotide that is modified to enhance its resistance to nuclease digestion.
26. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a moiety selected from the group consisting of: biotin, amino glycoside, lipophilic, phosphorothioate, morpholino and deoxy.
27. **(previously presented)** A targeted oligonucleotide construct as in claim 1, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a phosphorothioate moiety.
28. **(canceled)**
29. **(canceled)**

30. **(previously presented)** A targeted oligonucleotide construct as in claim 8, wherein the oligonucleotide is an antisense oligonucleotide analog that is selected from the group consisting of: an antisense oligonucleotide that is modified with a cell uptake facilitating moiety, an antisense oligonucleotide that is modified with a stabilizing moiety, an antisense oligonucleotide that is modified to enhance its solubility, and an antisense oligonucleotide that is modified to enhance its resistance to nuclease digestion.
31. **(previously presented)** A targeted oligonucleotide construct as in claim 8, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a moiety selected from the group consisting of: biotin, amino glycoside, lipophilic, phosphorothioate, morpholino and deoxy.
32. **(previously presented)** A targeted oligonucleotide construct as in claim 8, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a phosphorothioate group.
33. **(canceled)**
34. **(canceled)**